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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,944	04/19/2005	John Nicholas Argyropoulos	62848A	4506

109 7590 03/14/2006  
THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION  
P. O. BOX 1967  
MIDLAND, MI 48641-1967

EXAMINER

NILAND, PATRICK DENNIS

ART UNIT PAPER NUMBER

1714

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,944	<b>Applicant(s)</b> ARGYROPOULOS ET AL.	
	<b>Examiner</b> Patrick D. Niland	<b>Art Unit</b> 1714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

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1. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The instant claims recite “a polyurethane dispersion” and “comprising a mixture of a polyisocyanate (claim contains misspelling) and a molecule having hydrogen active moieties”. It is unclear if “polyurethane” is intended to require the reaction of the isocyanate and active H compounds or if “mixture” is intended to require that they are unreacted.

B. The instant claims recite “optionally” followed by two components separated by “and/or”. It is unclear if both components are optional or only the first recited component.

C. The grammar of claim 12 is so unclear it is unclear what method step or steps is/are required.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 10, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 5548022 Ito et al..

Ito discloses and claims aqueous dispersions of polyurethanes made with the instantly claimed mixture including hydrogenated XDI which falls within the scope of the instantly claimed isocyanate. Hydrogenated XDI is expected to be a technical mixture of the isomers the chemistry inherent to this reaction produce via the well known organic chemistry theories. The claimed hydrogenated XDI is therefore expected to give the mixtures of the instant claim 2 necessarily inherently. See the claims, of which the claiming of hydrogenated XDI is a disclosure of the isocyanate with sufficient specificity so as to anticipate its use, column 5, lines 20-22; column 6, lines 45-61 encompasses the use of no organic solvent, which falls within the scope of the instant claim 4, emulsifier of the instant claim 10 is disclosed at column 7, lines 4-12; column 10, lines 1-67 encompasses the instant claims 12-14; and the remainder of the document. The stabilities of the instant claim 14 are necessarily inherent as the use of the claimed aliphatic hydrogenated XDI will give a more light stable polyurethane than one containing aromatic isocyanate as is well known and necessarily inherent to the patentee's claimed polyurethanes.

5. Claims 1-8 and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 6569533 Uchida et al..

See the abstract; column 2, lines 49-67; column 3, lines 18-67; column 4, lines 1-67, particularly 6-33 and 48-67; column 5, lines 1-67, particularly 35-67; column 6, lines 1-67; column 7, lines 7-15; column 10, lines 20-66; column 13, lines 40-67; column 14, lines 1-49 and 60-67; column 15, lines 1-20; column 16, lines 1-61; and the remainder of the document clearly

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disclose the above claimed inventions. Hydrogenated XDI is expected to be a technical mixture of the isomers the chemistry inherent to this reaction produce via the well known organic chemistry theories. The claimed hydrogenated XDI is therefore expected to give the mixtures of the instant claim 2 necessarily inherently. The stabilities of the instant claim 14 are necessarily inherent as the use of the claimed aliphatic hydrogenated XDI will give a more light stable polyurethane than one containing aromatic isocyanate as is well known and necessarily inherent to the patentee's claimed polyurethanes.

6. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 6569533 Uchida et al..

See the abstract; column 2, lines 49-67; column 3, lines 18-67; column 4, lines 1-67, particularly 6-33 and 48-67; column 5, lines 1-67, particularly 35-67; column 6, lines 1-67; column 7, lines 7-15; column 10, lines 20-66; column 13, lines 40-67; column 14, lines 1-49 and 60-67; column 15, lines 1-20; column 16, lines 1-61; and the remainder of the document clearly disclose the above claimed inventions. Hydrogenated XDI is expected to be a technical mixture of the isomers the chemistry inherent to this reaction produce via the well known organic chemistry theories. The claimed hydrogenated XDI is therefore expected to give the mixtures of the instant claim 2 necessarily inherently. The stabilities of the instant claim 14 are necessarily inherent as the use of the claimed aliphatic hydrogenated XDI will give a more light stable polyurethane than one containing aromatic isocyanate as is well known and necessarily inherent to the patentee's claimed polyurethanes.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the instantly claimed mixtures of isocyanates because mixtures, though not the

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instantly claimed amounts thereof, are encompassed by the patentee at column 4, lines 1-2, it is within the ability of the ordinary skilled artisan to determine the mixtures and amounts of each isocyanate needed to obtain desired properties as evidenced by the absence of guidance on this issue by the patentee, and the ordinary skilled artisan expects the combinations of properties contributed by each isocyanate in proportion to the amounts thereof. Furthermore, the skilled artisan would use excess of the preferred isocyanates, including hydrogenated XDI, since its properties are obviously desired most. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the instantly claimed solids content of claim 9 because the patentee encompasses aqueous solutions, which are infinitely dilutable by definition, and dispersions and thus encompasses a large range of feasible solids contents and it is within the ability of the ordinary skilled artisan to determine the solids content desired based on factors such as desired viscosity and desired coating thickness, and the patentee encompasses all possible solids contents by its silence regarding this feature.

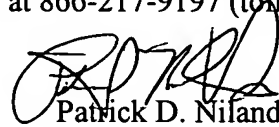
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on Monday to Thursday from 10 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick D. Niland  
Primary Examiner  
Art Unit 1714